

AMERICAN

JUNE • 1956

# Cinematographer

THE MAGAZINE OF MOTION PICTURE PHOTOGRAPHY



*In This Issue...*

- Movies On Tape
- Small Studio Set Construction
- Filming "The Great Locomotive Chase"

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AMERICAN

# Cinematographer

THE MAGAZINE OF MOTION PICTURE PHOTOGRAPHY  
PUBLICATION OF THE AMERICAN SOCIETY OF CINEMATOGRAPHERS

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## ON THE COVER

HUNDREDS of spectators stare in the background as Director of Photography Charles Boyle, A.S.C. (Chal from left) starts the camera rolling on "The Great Locomotive Chase" for Walt Disney. At right, center, is Fess Parker who stars in picture along with Jeffery Hunter. Here the Clayton, Georgia, depot is made up to look like the Marietta station of 1862. Story on the photography begins on page 354 of this issue. (Photo copyright by Walt Disney Productions.)

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Mitchell Camera Film full color panoramic view of Roman Soldier sequence from the Bob Jones University Film, "Wine of Morning."

# UNIVERSITY MAKES FEATURE FILM

## University Film Production Unit Shoots Full-Length Motion Picture on Campus

In Greenville, South Carolina, Bob Jones University is demonstrating a remarkable new trend in campus-produced films. This institution has not only reduced filming costs, but has created professional theatre-quality films, like the full-length feature "Wine of Morning," to equal Hollywood's best efforts.

These remarkable changes have been accomplished through the application of motion picture set techniques and the adoption of professional equipment used by major motion picture studios. The leading example of this development is seen in the increased use of the Mitchell 16mm Professional Camera, whose service-free operation and broad range of use has materially cut the costs of campus film production. Representative of film departments owning Mitchell Cameras are: Bob Jones University, Georgia Institute of Technology, Moody Institute of Science, and the Universities of California, Mississippi, Southern California, and Washington.

Complete information on Mitchell Cameras is available upon request on your letterhead.



Camera instructions are given by Mr. Katherine Strahle, Director of the Bob Jones University's film unit.

**\*85% of the professional motion pictures shown throughout the world are filmed with a Mitchell Camera.**



On the set of *John's Judgment* stand the Mitchell Camera factors as set details created by students.

University cameramen use standard Hollywood studio 16mm Mitchell Camera for interior scenes.

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Reprinted from the American Cinematographer, April, 1956.

# HOLLYWOOD BULLETIN BOARD

News briefs about the A.S.C.  
its members, and important  
industry personalities



EDITH ROTTMAN



SIDNEY SELOW



PETER MOLE

MAY MEETING of the American Society of Cinematographers featured talks by Ralph Auerbach, of Alton B. Endem Laboratories, and Sidney Selow, head of Consolidated Film Industries. Hollywood laboratories, an subject of much concern. Both discussed the implications inherent

of new Ampex Videotape recorder held for future of feature film making. Peter Mole, president of Mole-Redmond Company, recently returned from European tour, told of present status of film production in various European countries.



ALFONSO SANDOZ TELLO (left) was one of guests at the A.S.C.'s May meeting. Prominent in film production circles in Mexico, he's in Hollywood on vacation and in close acquaintance with old friends, like cinematographer Ernest Lazelle, A.S.C. at his left.



AL SAMUELS (2nd from left) was once Hollywood director, was another guest of the American Society of Cinematographers at its May dinner-meeting. Others (from L to R) are Arthur Rabson, A.S.C. president George Felony and Soden Andriol.

Lee Gurness, A.S.C., is in Cuba directing the photography of "The Big Boofoe" for Lewis Blumberg Productions, with Errol Flynn.

Hoyd Crosby, A.S.C., also in Cuba since May 1st, is directing the photography of "The Old Man of The Sea," which Leonard Hayward is producing for Warner Brothers.

Veteran cinematographer Johnnie Mesoll is directing the photography of the "TV Reader's Digest" film series for Alpha Productions at American National Studios.

The A.S.C. last month voted to Active Membership. Gayne Boucher of New York, one of the cameramen who aided in the filming of "Guerrilla Holiday."

The Society also honored Richard H. Walsh, president of the I.A.T.S.E., with an Honorary Membership in the A.S.C. in appreciation of his efforts in securing the five day work for cameramen and other technical workers in the film industry.

Soi Paffio, A.S.C., veteran cinematographer.  
(Continued on Page 300)





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*Bradley Kemp*  
President

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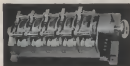
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(Continued from Page 336)

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pher and see him a top cameraman at Warner Brothers Studio, last month embarked with Mrs. Pohn for a 5 months' tour of Europe.

• • •

**Arthur Miller**, past president of the ASC, after turning over the gavel of office of the Society's presidency to George Folsey last month, set out for a two months' fishing trip on the Mexican west coast.

• • •

**Benjamin Berg, ASC**, whose one-reel short subject on life of famous artist Goya is proving a boxoffice success, is planning to expand his film production activities. New production soon to go before camera will take him to South America and Italy.

• • •

### AMERICAN SOCIETY OF CINEMATOGRAPHERS

FOUNDED January 5, 1909, The American Society of Cinematographers is composed of the leading directors of photography in the Hollywood motion picture studios. Its membership also includes non-resident cinematographers and cinematographers in foreign lands. Membership is by invitation only.

•

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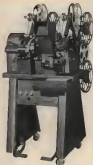
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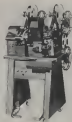
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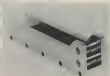
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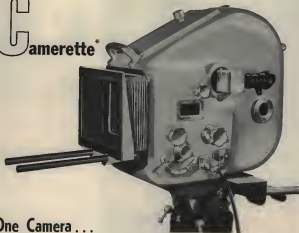


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(Continued on Page 340)

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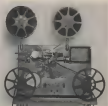
*Rainbowlab, Inc.*

**MOVIELAB FILM LABORATORIES, INC.**

619 West 54th Street, New York 19, N. Y. JUDSON 6-0360

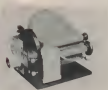
# WHAT'S NEW

(Continued from Page 342)



## 16mm Editing Machine

M. W. Palmer, 468 Riverside Dr., New York, N. Y., announces a new three-channel 16mm film editing machine. It provides a composite film channel for sound and picture on one film, a picture channel with 5" x 6 1/2" brilliant picture, and an optical sound track channel with stabilizer, sound drum and amplifier. Sound head for magnetic track is also available at extra cost. Provision is made for instantaneous film marking and track shows on image screen as it is being made.



## Solenoid Camera Control

Simple Engineering Co., 17 No. Jefferson St., Danville, Ill., announces a new solenoid control for the Pathe Super 16 (Webcam) cine camera. Operating on 60 cycle AC current, it uses 1/5 ampere of current, and can be used to operate camera for taking single exposures automatically or manually timed, or for remote control at normal speed. Design is such that all camera features are immediately accessible. List price is \$35.00 for solenoid, mounting plate and bracket.

## Meter Price Reduced

Kling Photo Corp., 257 Fourth Ave.,  
(Continued on Page 346)





KODAK CINE SPECIAL

## ON THE WORLD'S LARGEST STOCK OF MOTION PICTURE CAMERAS

Full NEW CAMERA Guarantee! The World's largest stock of motion picture cameras in both 35mm and 16mm sizes makes a selection of all types, all focal length lenses, immediate delivery from stock, and the lowest prices *anywhere* for equal quality.



BELL & HOWELL 35MM STANDARD

### 16mm

Arriflex  
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Bell & Howell  
Bolex  
Cine Special  
Eastman  
Fastax  
Maurer  
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### 35mm

Acma  
Akeley  
Aksels  
Arriflex  
Bell & Howell  
Cineflex  
Cineflex  
Cineflex  
Cineflex

Fairchild  
Fastax  
Mitchell  
Howell  
Wall  
Du Vry  
Eastman

### 70mm

Rulcher

and all camera accessories: magazines, motors, tripods, etc.



ARRIFLEX "1200"



ARRIFLEX

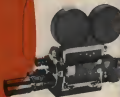


MITCHELL MODEL 10

Look for the Gordon Enterprises nameplate on the camera you buy. It guarantees full NEW CAMERA condition, possible because all equipment from Gordon Enterprises is fully rebuilt by skilled crafts men in one of America's finest air-conditioned instrument shops. You are invited to visit these facilities.

*Gordon Enterprises*

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MITCHELL SINGLE SYSTEM SOUND



16MM MAURER

Sales Manager, Motion Picture Equipment Div.  
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CINEFLEX 35MM

# an answer

for every recording job—every budget

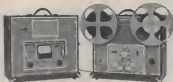
in the complete Magnasync line

from  
\$895.00  
to \$1,796.00



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X 400 E-1 (16mm)

every recorder is a complete sound system!



models  
602 E-5 (16mm)  
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16mm, 17 1/2mm, 35mm — SINGLE CHANNEL — STEREOGRAPHIC —  
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New York 29, Judson 6-1400 Cable Address CINERQUIP  
CHICAGO—Zavitz Camera Service, Inc. 3252 Foster  
Ave., Chicago 25, El 5000 8-2104

SAN FRANCISCO—Brooks Camera Co., 45 Kearney St.  
San Francisco Calif. EX-2000 2-7348  
CANADA—Alex L. Clark, Ltd., 3748 Bloor St., Toronto  
18 Ontario SE-2000 1-3323

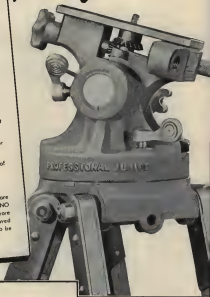
# IMPROVED PROFESSIONAL JUNIOR TRIPOD

Always a great tripod, the new improved PROFESSIONAL JUNIOR with the removable head, now features the following improvements:

1. Simplified camera attaching method with easily accessible knob—no fumbling underneath camera platform—quick, easy, positive.
2. Adjustable telescoping pan handle—make it shorter or longer to suit your needs.
3. Additional pan handle sockets for left, right or reverse tilt.
4. Larger gripping area and sturdier construction of tilt and pan locking levers.
5. New tie-down eyelets in flange.

You'd expect this outstanding tripod to cost a lot more money, but here's the big surprise—THERE IS NO ADVANCE IN PRICE! For better, smoother, more efficient performance—see, test, try the improved PROFESSIONAL JUNIOR today. You won't want to be without it.

# Tripod Perfection!



## Professional Junior GEARED HEAD

Interchangeable with  
Friction Head on  
same tripod.



## New Professional Junior Adjustable wood BABY TRIPOD

—for friction and geared Heads  
Has substantial shoe and spur  
Measures from floor to flange 25" extended—  
17" collapsed.

High-Hat Low Mount Available

FRANK C. ZUCNER

**CAMERA EQUIPMENT CO.**

# ARRIFLEX

New 35 mm Model 2A

With 180° Shutter

**A TRULY GREAT  
CAMERA**

for TV, Newsreel  
and commercial  
films



For tough and trying assignments, ARRI-FLEX 35 is in a class by itself. Reflex focusing through photographing lens while camera is operating—this is just one outstanding ARRI-FLEX feature.

Equipped with bright, right-side-up image finder, 6½x magnification. Solves all parallax problems. 3 lens turret. Variable speed motor built into handle operates from lightweight battery. Tachometer registering from 0 to 30 frames per second. Compact, lightweight for either tripod or hand-held filming. Takes 200' or 400' magazines. White for free folder.

Blimp now available.

16mm ARRI-FLEX also available.

FRANK G. ZUCKER

**CAMERA EQUIPMENT CO.**

315 West 43rd Street, New York 36, N. Y.

## INDUSTRY NEWS

16mm color film laboratories are now in the throes of changing over to the new Eastman 5249 reversed color print stock from the old 5265 stock.

The new 5249 stock is said to produce prints having finer grain and higher definition than old stock. Moreover, it is a less contrasty so that the reproduced picture is approximately the same in quality as the original.

Color prints made on the new stock will have a black-and-white track instead of the silver sulphide track, which has been the practice in the past, and this should greatly improve the sound track used for printing. This means that the sound track must be a negative.

Lab men report that second-generation prints made on 5249 stock from masters made on the same stock are highly satisfactory.

\*\*\*

The Association of Cinema Laboratories re-elected all incumbent officers in the 1936 election held during the Association's annual get-together in New York early this year.

Official announcement of results released last month reveals that the following industry executives will continue their posts during 1936: Neal Kosha, The Calvin Co. President; Russell Helmslag, Precision Labs, V-pres; Byron Roundbush, Byron, Inc. Secretary; and George W. Colburn, Colburn Lab. Treasurer.

Purpose of the Association is the development of uniform film laboratory methods and practices.

\*\*\*

Television film production in Hollywood continues to provide the greatest field of employment for cinematographers, with around 45 cameramen directing the photography of sponsored TV films each week as against an average of 10 shooting feature films in or for the major studios.

\*\*\*

Approximately one-third of Hollywood ordered TV shows—more than 16—last seasons this season, according to *Daily Variety*.

In the field of Hollywood feature film production, *Variety*, on May 25th, revealed the following comparative figures which show present studio activity as compared with 1935.

Alfred Artists have started 12 pictures this year as against 11 this date last year.

Both feature and TV  
film production continues  
high in Hollywood . .

Metro-Goldwyn-Mayer: this year to date, 11; last year, same date, 7.

Paramount: this year to date 11, same date last year, 4.

Republic: this year to date, 1, same date last year, 12.

RKO: this year to date, 5, same date last year, 6.

Twentieth Century-Fox: this year to date, 7, same date last year, 7.

Universal-International: this year to date, 13; same date last year, 10.

Warner Brothers: this year to date, 5; same date last year, 10.

\*\*\*

Of the twenty-eight features being filmed in Hollywood the week of May 23th, 9 were in CinemaScope, 7 in Vista Vision, 1 in 6mm, and 11 in non-reference wide-screen formats (viz. 1.33-to-1, etc.).

\*\*\*

Details of a new type of target analysis, or "gun camera," which enables the human eye in that it automatically compensates for changes in light conditions, have been revealed by the U. S. Air Force.

The camera was designed and engineered by Fairchild Camera and Instrument Corporation of Syosset, N. Y. Installed on super-sonic jet fighter planes, the camera can be used to record details of aerial combat. The importance of the automatic exposure control can be readily understood when it is realized that the nose of fighter plane, engaged in a "dog fight" may be pointed at brilliant earth sky, and a few seconds later at a densely shaded area of the earth, as it maneuvers into firing position. In previous cameras, this meant that portions of the film would be greatly over-exposed while other sections would be under-exposed.

With the new Fairchild camera, the actual illumination received through the picture-taking lens can be compared 64 times a second with the illumination from a reference lamp inside the camera. If there is a difference, the lens diaphragm is changed to match the light level of the reference lamp, which insures proper film exposure. This is accomplished by a closed-loop system employing a translator servo amplifier. The rate of response is a change in light is rapid. The system will drive or move the diaphragm 6 lens stops in 1.8 seconds.

(Continued on Page 354)

# The Hemispherical Ball-Joint Head

AN EXCLUSIVE FEATURE OF THE NEW

## ARRI 16 TRIPOD

Here's the kind of tripod you'd expect from the maker of the famous Arriflex cameras — a tripod with the most advanced features in the field.

One outstanding Arri-exclusive is the Hemispherical Ball-Joint Head. No matter how uneven the ground or how tilted the tripod — this head permits you to level your camera without touching the tripod legs. And a built-in spirit level tells you when you're 'set'.

FOR LOW ANGLE SHOOTING...

### ARRI 16 SHORTY

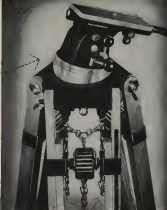
Supplied with head, uses Hemispherical Ball-Joint Head. Interchangeably with Arri 16 Tripod.



#### SPECIFICATIONS:

	ARRI 16 TRIPOD	ARRI 16 SHORTY
WEIGHT	22 1/2 lbs.	8 1/2 lbs. less head
WORKING HEIGHT		
Maximum	65 inches	21 inches
Minimum	13 inches	8 inches
CLOSED	42 inches	22 1/2 inches
PRICE	\$175.00 complete	\$94.00 less head

NOTE: Prices, weights and measurements listed are approximate, subject to change.



### THE ARRI 16 TRIPOD

Also gives you these important features:

- **HEMISPHERICAL BALL-JOINT HEAD** — precision-machined ball-and-socket (1/16" diam.) perfectly suited for easy adjustment and secure locking action.
- **PAN and TILT LOCKS** — each controlled independently.
- **ADJUSTABLE PAN HANDLE** — conveniently located for optimum leverage — can be held under armpit leaving hands free to control/operate lenses and camera.
- **SMOOTH PAN and TILT MOVEMENTS** — achieved through precise machining of all metal parts.
- **SPIRIT LEVEL** — for lining up camera.
- **PATENTED TRIPOD SCREW** — fits both foreign and American tripod sockets. Outside thread section is for foreign cameras. When used with American camera, it retracts, and inner "American thread" engages camera.
- **SINGLE LOCK COLLAR** — securely locks each leg at desired extension and automatically equalizes loading pressure on both shafts.
- **CALIBRATED LEG SCALES** — permit quick and easy setting of all legs to same extension.
- **ADJUSTABLE ANTI-SLIP CHAINS** — control leg spread and prevent tripod from falling.
- **TIE-DOWN RINGS** — for securing tripod to floor.
- **TIE-DOWN LIPS** — for attaching to dolly or clamps.
- **DUNK SPIES** — double, hardened steel tips secure firm, sure footing.
- **CONSTRUCTION** — legs made of seamless hunch for extra strength and shatterproof. Metal parts are made of brass, steel and aluminum — exposed surfaces finished in black wrinkle and chrome. Camera platform is leather covered.

**KLING PHOTO CORP.**

227 South Avenue, New York 15, N. Y.  
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# NEW F & B "CINEVOICE 400"

F&B's new Cinevoice CONVERSION for 400 ft. magazines . . .

- DOES NOT cut down your camera . . .
- DOES NOT require an auxiliary motor . . .
- CAN STILL be used as the original 100 ft. camera when necessary.

A special swivel bearing take-up system and ball-bearing magazine shafts make possible the smoothly smooth, steady and jam-free operation. Either Mitchell or Bell & Howell 400 ft. magazines may be used on F&B conversion and in 10 seconds the magazine can be removed the light trap closed and the Cinevoice is ready for operation as a 100 ft. camera again.

## PLUS . . . ALL THESE BUILT-IN FEATURES

- |  |  |
|--|--|
| 1. BALANCED VIBRATOR footage counter             | 4. Common plugs for all sound sockets.         |
| 2. Built in behind the lens filter slot with two | 5. Tripod sockets reinforced with brass insert |
| 3. Gear holders                                  | 6. New neon signal light                       |
| 7. Headphone jack built in camera                |  |

## PLUS . . . COMPLETE REFINISHING . . .

Your Cinevoice camera and ABB #6 magazine completely overhauled, cleaned up and as finished in beautiful, professional black nickel finish.

YES F&B "CINEVOICE 400" IS THE LOWEST PRICED CONVERSION AVAILABLE

For Complete new outfit

Turner Cinevoice plus F&B conversion  
and 400 ft. B&H magazine 1200.00

PRICE ONLY \$345.00  
not including magazine.



## AUTOMATIC SPLICER SPUCE-O-FILM

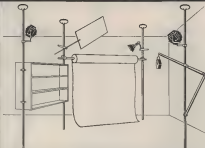
for 8mm-16mm combination & 35mm  
with the Exclusive PRESET SCRAPER!



### A PERFECT SPUCE EVERY TIME AUTOMATICALLY!

The major cause of film failures is poor splicing . . . and the major cause of poor splicing is improper scraping (either too much or too little). SPUCE-O-FILM solves both of these problems with its automatic scraper that takes off exactly the right depth of emulsion every time . . . regardless of applied pressure. SPUCE-O-FILM is a precision tool . . . imported from England. It has a precision-ground, hardened steel scraper that is preset and ready for making thousands of splices.

BROCHURE ON REQUEST



A NEW WAY TO HOLD THINGS UP . . . ANYWHERE  
LIGHTS - PROPS - BACKGROUNDS - MIKES  
Without Nails or Screws - With

## POLECAT

POLECAT is a featherweight, telescoping column of 100 inch anodized aluminum with an expansion spring in the top. Adjust it close to your ceiling height with locking collar. Then put spring in and out of phase as you please. Release pads top and bottom protect ceilings and floors. POLECAT can't be cracked over . . . and takes less floor space than a chair dolly.



HOLDS 400 POUNDS. Makes a perfect, mobile, lightweight for lights. Two POLECATS with cross piece and fitting can be used to hold a roll of background paper, props, flats, etc. Perfect for location filming.

BROCHURE ON REQUEST

AVAILABLE NOW AT F&B

## MILLER Fluid Action TRIPOD HEAD

Complete control for smoother panning on both lens travel and optical problems . . . Full 360° horizontal movement. For F&B PRO-CINE TRIPOD

ADAPTER PLATE \$12.00

PRICE \$112.50



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C. V. WHITNEY TOLD MERIAN C. COOPER "Get the Best"



COOPER asked  
JOHN FORD to have filmland's  
most gifted and daring stuntmen  
enact the hand-to-hand combat  
scenes. They were:

BILLY CARTLEDGE  
CHUCK HATWARD  
SLIM NIGHTOWER  
FRED KENNEDY  
FRANK McGRATH  
CHUCK ROBERSON  
DALE VAN SICKLE  
HENRY WILLS  
TERRY WILSON

the C. V. WHITNEY Pictures, Inc., attraction

# JOHN WAYNE in THE SEARCHERS

co-starring

JEFFREY HUNTER • VERA MILES • WARD BOND • NATALIE WOOD

from a novel personally selected by C. V. WHITNEY, president  
MERIAN C. COOPER, vice-president in charge of production

directed by JOHN FORD

Color by TECHNICOLOR • in VistaVision

soon to be presented by WARNER BROS.

C. V. WHITNEY TOLD MERIAN C. COOPER

"Go the Best"

Then COOPER asked JOHN FORD to capture the full sweep of the novel, THE SEARCHERS. FORD took the entire company to Monument Valley where he got real Navajos. The entire tribe cooperated, portraying the roles of their former bitter enemies, the Comanches.

Among the Indians were:

AWAY LUNA

BILLY YELLOW

BOE HARTY MURDER

EXACTLY SONNIE BETHUNE

FEATHER HAT, JR.

HARRY BLACK HORSE

JACK TEN HORNS

NANCY HULES SON

PERCY SHOOTING STAR

PETE GRAY EYES

PIPE LINE BEGONE

SMILE WHITE SHEEP



## The Indians

in the C. V. WHITNEY Pictures, Inc., attraction

# JOHN WAYNE in THE SEARCHERS

co-starring

JEFFREY HUNTER • VERA MILES • WARD BOND • NATALIE WOOD

from a novel personally selected by C. V. WHITNEY, president  
MERIAN C. COOPER, vice-president in charge of production

directed by JOHN FORD

Color by TECHNICOLOR • in VistaVision

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## BRILLIANT PERFORMANCE

That happy glow (twilight) is Precision's camera simply the reflection of a solid reputation for sound, careful and accurate film processing. Waste no more.

Precision is the paragon in film processing. In the past, Precision found techniques to bring the best out of black and white or color originals. In the present, facilities are the professional's very best for any of your processing needs.

And, in the future, Precision will, as usual, be first again (depend on 35 with the newest developments to serve you better.

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In everything, there is one best . . . In film processing, it's Precision



INSPECTING the magnetic head assembly in Ampex Corporation's new Videotape recorder is Charles P. Gansburg, Senior project engineer in charge of video development for the company, and Philip L. Gandy, manager of the company's audio division. First to use the equipment will be the NBC and CBS television stations in Hollywood.

## Movies On Tape

**Magnetic movies are here. Ampex whips the high tape speed problem and demonstrates its first practical video-tape recorder for black-and-white pictures.**

By FREDERICK FOSTER

**F**ROM A PRACTICAL standpoint, the electronic recording of motion pictures is now an accomplished fact.

No recent development relating to motion picture production has been watched with greater interest than that which promised the recording of movies on film by electronic means. First to announce development of such a system was Bing Crosby Enterprises which unveiled its system for the press and industry several years ago. Radio Corporation of America followed a year or

so later with announcement of its system, which was aimed for the television industry. No practical equipment has been marketed by either company to date.

Last month, Ampex Corporation, a leading manufacturer of magnetic recording equipment, demonstrated its Videotape recorder for the television and motion picture industry. The Ampex is a complete record and playback unit capable of recording and reproducing commercial monochrome television

material. It handles both video and audio information concurrently operating at tape travel speed of 15 inches per second, and utilizing magnetic tape two inches wide.

The machine was designed specifically for the purpose of television program delay and it is for this purpose only that it will be first employed, according to Ampex. Both NBC and CBS have placed orders for the equipment which is expected to be delivered and put into operation late this month.

However, the equipment's potential as a means of producing motion pictures was the subject of much speculation during the recent convention of the Society of Motion Picture and Television Engineers in New York. Addressing the convention, Ampex's R. H. Snyder said, "Any speculation on the replacement of the 35mm camera by Videotape is, in our belief, foolish at this time."

Mr. Snyder stated that it might be possible for a motion picture director to shoot scenes simultaneously in film and in Videotape and immediately review the tape recording while his cast and sets were still assembled. "This procedure could," he stated, "reduce production time and costs in movies." However, video tape picture quality is simply not comparable with ordinarily good original film, and not even remotely comparable to the new larger-negative film processes. Mr. Snyder revealed that Ampex sees "no immediate application for video tape here, and probably very little even in the future."

The new Ampex video tape recorder system records both picture and sound on a single magnetic tape two inches wide. Picture quality is considerably better than that obtained with current kinescope techniques using photographic film, according to Charles P. Gansburg, Senior Project Engineer in charge of video development. The "gray scale"—the ability to reproduce accurately all shades from black to white, is inherent in this new video magnetic tape recording system. On the other hand, the gradient from black to white is not uniform in photographic film.

Resolution—the measure of the clarity of the picture—is far beyond the capability of the average television receiver. Thus, when a tape recorded program is telecast, the limitation of picture quality will be in the home receiver rather than in the quality of transmission.

Perhaps even more important than the reproduction of recorded programs with "live" relevant quality are the operational and economic advantages the Ampex Videotape Recorder offers the television industry. Programs can be recorded directly from the TV camera, from a TV receiver, from television

transmission lines or from microwave relay systems. Just as with tape recording, the program can be immediately re-played with no processing of any kind necessary. Considerable economy can be effected by erasing the recorded signal when it is no longer needed and re-using the tape to record another program. This is in contrast to photographic film which cannot be re-used after it has once been exposed.

Once the equipment has been installed and adjusted, operation is as simple as that of an audio tape recorder. To record a program, the operator presses one button to start recording. To play a recorded program, he simply presses the playback button.

The machine operates on the same basic principles employed in a regular audio tape recorder. Electrical signals are passed through a coil around an electromagnet known as the recording head. The strength of the magnetic field in the recording head at any time depends on the electrical current in the coil at the given instant. In turn, the magnetic field impresses a pattern on the magnetic surface of the tape as it passes

the recording head. The pattern on the tape, therefore, corresponds to the electrical signals in the coil on the recording head. Since the electrical signals are generated by the TV camera, the pattern on the tape corresponds to what the camera "sees" at any given instant.

To reproduce the picture, the tape is passed across the same magnetic head. The magnetic pattern on the tape induces a current in the coil around the head. Since the pattern corresponds to the original picture, the induced current can be fed to a television transmitter just as though it were coming directly from the TV camera. To obtain the 4-megacycle response needed for video recording, tape speed would have to be 2,000 inches per second. At that rate, a reel of magnetic tape 14 inches in diameter would record only 29 seconds of program material.

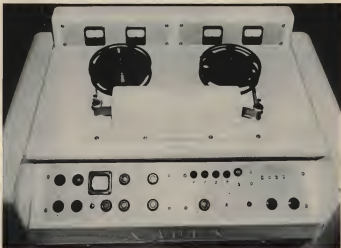
Ampex engineers have developed a system which permits a tape speed of only 15 inches per second, permitting more than a full hour's program to be recorded on a single 14-inch reel of tape. To achieve this relatively low tape speed—a standard speed used in some

recording—a magnetic head assembly which rotates at a high speed is used, giving an effective tape speed sufficient to record and reproduce the full 4-megacycle band width. Thus, while the tape moves slowly, the heads move across the surface of the tape at a very high speed. The head assembly actually consists of four heads placed on a rotating drum. One head is always in contact with the surface of the tape. As one head leaves the tape, the next head makes contact. The magnetic pattern is recorded transversely across the tape instead of longitudinally as in conventional audio recorders.

The sound that accompanies the picture is recorded in the ordinary manner along one edge of the magnetic tape.

As has been stated above, with the Ampex equipment video programs can be recorded directly from the television camera, TV receiver, from TV transmission lines or microwave. In utilizing the same equipment to record a motion picture production, the action would be picked up by a closed-circuit TV camera instead of a film camera and the

*(Continued on Page 184)*



TOP VIEW of the Ampex Videotape recorder, showing the 14-inch reels and the 3-inch wide magnetic tape which encompasses a full hour's program of picture and sound. Despite the number

of controls shown here, recordings are made by pushing only one button. Same unit is used for playback as well as recording. Cost is around \$45,000.



VARIETY was given the chase sequences by filming some of the action with a Road camera instead of in a fellow shot with the camera motion-mounted. Here the pursuing locomotive thunders

through a mountain pass as the action is recorded in Cinematograph and color with a Mitchell camera mounted on a parallel derrick alongside the tracks.

## Filming "The Great Locomotive Chase"

Cinematographer Charles Boyle's skillful use of camera gives dramatic impact to chase scenes in latest Disney live-action feature.

By ARTHUR ROWAN

AS THE THRILLING scenes of Walt Disney's "The Great Locomotive Chase" unfold on the screen, few will realize what tremendous planning and preparation was necessary in order to photograph them. These are chase scenes that are different from the usual scenes of the pursuing and the pursued filmed in Hollywood, where every possible kind of equipment necessary for this type of photography is at the cameraman's immediate command.

The chase scenes for this picture were filmed 1500 miles

away, in the mountains of Georgia, and as is usually the case when a film company goes on location, exigencies arose that invariably found the company in need of a vital piece of production equipment or forced to change its shooting schedule.

That's what happened to the Walt Disney company on location at Clayton, Georgia, where director of photography Charles Boyle, A.S.C. and his camera crew undertook one of the most challenging photographic assignments in filmdom



MITCHELL CINERASCOPE camera was mounted on locomotive, just beyond the cab, for an "angler's-eye view" of scene ahead as train pulls into small way-side station where it is taken by Yankees.



CAMERA CAR fitted with flanged wheels rolls along track behind locomotive while camera crew on tender shoots important action. Here camera car supplies power for sound and camera.



CAMERA CAR is used here for photography. Coupled to locomotive, dramatically action is filmed with aid of booster light supplied by reflector in hands of grips.



FRAMEWORK and platform was erected on one side of ancient locomotive for shooting closeups of drive wheels being reversed, which was the only means of backing the ancient "barber-shop."

history. Because there were little or no paved roads paralleling the railroad over which much of the action was to be filmed, the camera car brought along for shooting from the highway was converted with flanged wheels so it could travel on the tracks. Some of the picture's most thrilling scenes were filmed from the camera travelling before or behind the train as it sped along the ancient rail line that extends from Atlanta to Chattanooga.

From a critical chapter in the nation's history Walt Disney selected a page unparalleled in daring and excitement as the basis for his most thrilling live-action feature, "The Great Locomotive Chase."

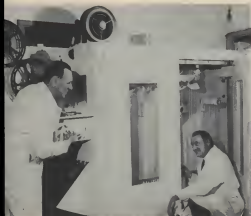
This is the story of the Andrews Raid, an incredible plot to break the back of the Civil War—a spy story of suspense, of high speed, of inconceivable bravery, of complete selfless-

ness on the part of not only a score of dedicated men who faced the armies of the Confederacy to attempt their mission, but of three Southern captives, too.

The Raiders' weapons were pieces of railroad rolling stock, not guns; their goal, the saving of untold lives, not the taking of any. Their reward was the most cherished, the most distinctive the country could then or now bestow: the Congressional Medal of Honor.

The Raiders' scheme was never so complex as Disney's job of restaging it, compounded as the latter was by the passage of nearly a century. Walt had to find ancient rolling stock that could still be operated, turn up a railroad untouched by time, move to the scene and re-run the locomotive race for the cameras.

(Continued on Page 379)



CHECKING RATE OF leader through dry box is Bob Gray, who designed and built the equipment, while engineer W. Wells handles the controls. Infrared lamps provide heat for drying film, while fan on top provides air circulation. (All photos by author)

## Bob Bailey's Homemade 16mm Film Processor

By BOB GRAY

IF SAVING MONEY had been his only aim, Bob Bailey probably never would have built his own 16mm film processor. The Houston, Texas, photographer knew that, in the long run, it would no doubt cost him as much as any standard commercial model. But he wanted more "control" over development of reversal film. He wanted to be able to actually develop it "by inspection." He wanted, in short, a machine that could not be obtained on the market.

So he built one. And today in the rear of his downtown Houston photo studio can be seen (and heard) one

of the country's truly unique film laboratory creations.

It is, as Bailey says, "a fantastic conglomeration of pulleys, weights, fan belts, windshield wipers, light bulbs, home-made gears, and baby diapers." It squirts through three small rooms, the film passing through tiny slots in the walls. It looks, for all the world, like something Rube Goldberg whipped up in one of his more lighthearted moments. And more than one person has laughed on first viewing Bob Bailey's film processing machine.

Bailey, however, has only god-natured tolerance for those who find the

appearance of his brainchild amusing. In the first place, few people ever see it. None of his competitors have. He doesn't look upon it as a machine which requires artistic symmetry. And the machine works so well it makes no difference what it looks like. It makes money for Bailey.

How Bailey built it is the story of a man determined to put his own ideas into practice. He began thinking about it in 1950 after 20 years of building up a solid still photo business. Bailey decided his new photo should offer motion picture processing to the amateur and to the television film market along the Gulf Coast. So he began checking catalogues for equipment. What he saw was fine, but he hesitated. And not because of prices.

"I guess maybe I wanted more in a processor than I could fairly expect," Bailey recalls now. "I figured that I ought to be able to develop reversal film by inspection in a darkroom. And I wanted some sort of protection against film or leader breaks."

So Bailey made his decision. Although he had never before seen a 16 mm processing machine he set out to build one.

First, Bailey sketched out some rough plans. Then, with a skilled mechanic to help and advise him, Bailey spent the next five months building his machine from the ground up.

It meant buying and shaping expensive stainless steel sheets into tanks; experimenting with plastics to get precise thicknesses into moving parts. It meant perfecting dozens of separate parts and combinations of parts without any model or plan to go by.

Since Bailey did not have any concern about moving his finished processor from one spot to another, compactness was almost unnecessary. Hence, the machine was built right in three back rooms of his plant.

This has proved a blessing in numerous ways. Bailey figured that by attaching out the machine's components it would give the lab man almost continual visual contact with the film as it was being processed. Film breaks would thus prove less of a hazard.

In the first and smallest of the rooms Bailey installed tanks for first developer and bleach. Here, also, the film is loaded for processing. Appropriate safelights make it possible to develop reversal film by inspection when necessary. By installing two spindles Bailey is able to continually add more film without stopping the machine.

The film passes through a light-proof slit in the wall to the second room where it goes through clearing bath, second developer, hypo, and washes.

The second room contains also the one-half horsepower motor which drives the film transport system.

A 1930 Ford speedometer shows the film's progress in miles per hour, rather than feet per second. Here also may be seen the spectacular side of Bailey's creation. Leaving the final wash, the wet film takes off toward the ceiling, around pulleys. It moves overhead to a vertical frame resembling a miniature guillotine. Up and down in this frame the film slides, providing the shock so desperately needed when, on occasion, a piece of film parts company or the leader jumps the track.

The film rises and descends once more to pass through a second wall and into room number three for entry into Bailey's king-sized dryer. This great wooden cabinet is roomy and uncomplicated. It contains clusters of 150-watt infrared heat lamps to dry the film. A ceiling household floor fan on top circulates the warm air.

Although reversal film is usually dry by the time it reaches the second line of rollers, there are six such lines to permit drying even the most stubborn print stock.

Bailey discovered early that film shrinks as it dries, and therefore should move at a different speed in the dryer than it does in the processing tanks. He solved this problem with a simply-designed variable-speed pulley, controlled by an auto fan belt.

Once in the dryer, the film comes

VIEW OF TANKS in 3rd room. Film emerges through slit in wall at left of perforated box, which contains the re-exposure lamp.



LARGE ROLLS wrapped with layers of sponge rubber, then covered with baby diapers, absorb remaining water droplets from surface of film as it passes through drying cabinet.

into contact with another Bailey "original"—ordinary baby diapers wrapped around foam rubber rolls. Just the thing for removing lingering drops of water from tender emulsions!

Emerging from his machine, the film creenters one more thoughtful detail added in the name of convenience and control. There are two take-up speeds which can turn simultaneously, speeding up the momentary business of switching from full to new reel. But all these little conveniences and aides did not result from Bailey's original plan. Some have been added each year. In fact, hardly a month goes by but what Bailey or someone in his shop does not

come up with a new "gimmick" to try out on the machine.

Bailey knew, for example, how much more controlled overdevelopment of reversed film he could get by using oversize tanks of developer. He can quickly switch now from 10 to 20 gallon tanks if he desires, and by lengthening the amount of tank space, can put in additional tanks for either pre-hardener or more developer.

So, even if Bailey had any thought of trying to patent or sell duplicates of his processor (which he does not) it would be next to impossible.

"How could I sell something I modi-

(Continued on Page 312)



BAILEY'S ingenuite gadget which enables him to vary the rate of film travel, which is slower in the dry box than in the processing tanks due to resistance of film.



## The villain still pursues her!

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wards. To make such films, producers use technics which the Eastman Technical Service for Motion Picture Film has been happy to help the industry develop.

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A STUDY OF set construction in a typical small industrial film studio. Here conventional flats have been used to form a two-

room set. Note camera for lights immediately above center wall, also the long hangers (truss hangers) suspended from top of wall.

## Small Studio Set Construction

How to build and use "flats" for erection of interior sets.

By RALPH LAWTON

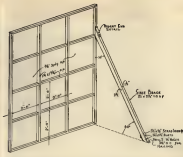
AS THE FILM MAKER moves into the field of professional motion picture production, it follows that his entire operation gradually assumes the standards of the professional. Instead of shooting the complete picture on actual location sites, the use of specially constructed sets becomes a vital factor in the economic as well as the qualitative phases of production.

For almost any type of planned film production, the use of sets is far more advantageous than practical interiors; they make possible improved quality in the photography because of the greater latitude which sets afford in lighting. When sets are used you will be able to light players and props more effectively; get more effective camera angles; and you'll find you can build your set specifically to suit the

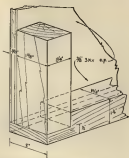
needs of action and composition, rather than having to adapt them to the limitations of an existing room.

The construction of sets isn't nearly as difficult as it first seems. It isn't particularly expensive, either, if you follow professional practice. This means building sets from standard units, or "flats," which can be arranged and rearranged, reassembled and decorated to fit a wide range of needs.

The professional flat is a standardized wall panel made of plywood or wallboard laid over a lightweight wooden frame, usually "roofs high"—about eight or ten feet in height. Used in conjunction with equally standard panels having a door, window or other orifice, they can be assembled easily to represent, from the camera's point of view,



DETAILS FOR constructing a conventional flat are shown in the two diagrams above. At left dimensions are given for putting together the framework of a full flat; also details for making



the angle brace necessary for holding flats in place in vertical position. Corner detail is shown in diagram at right. Flats are covered with plywood or composition wallboard.

a room of almost any size or shape desired. Once assembled, the flats may be painted or papered, and moldings, cornices, baseboards, etc., applied to complete the architectural details desired. The flats can readily be disassembled after the set is no longer needed, stored, and re-used time and again.

The basic structural part of the flat is a framework constructed of 1-by-3s. (In the accompanying diagram, these are shown as 1½" x 1½"; however, the 1" x 3" material makes for easier assembling and nailing.—ED.) Where the flat or panel is to be 4 feet in width—the size of standard plywood and wallboard panels—a second 1" x 3" member is placed in the middle and cross-members spaced and nailed at intervals of 24-inches, as shown in the diagram.

Two materials are generally used for the flat surface: composition wallboard or ¾-inch plywood. The wallboard is cheaper and lighter; the plywood costlier but more durable and has the added advantage of permitting removal of any wallpaper applied to it without damaging the surface of the flat. Whichever material is used, it should be given a coat of shellac after the flat is completed.

Most simple sets are constructed in an "L" shape and therefore stand readily without a great deal of bracing. However, some bracing is advisable to give the flats rigidity and prevent any vibration that would show up on the screen. The standard brace is a six-foot length of 2" x 2" lumber with the ends cut at an angle and finished with a piece of strap iron, properly bent, and having holes drilled to facilitate nailing of the brace to the frame of the flat and to the stage floor. (See diagram.)

Where doors or windows are required in a set, two methods may be followed: (1) you can obtain real door

and window frames from your local lumber mill, or (2) obtain second-hand units from a house wrecking company. These may be mounted within a flat, or they may be placed in position between two standard flats and, in the case of a window, the top and bottom filled in with small flat sections made for the purpose.

Where the set calls for showing only a single wall of a room, set up enough flats to give the desired wall width, nailing the frames together without driving the nails in completely. Always leave the nail head above surface so that it may be readily removed with a hammer.

Prop the flats in upright position and anchor them in place, using the angle braces described above. For this, use

(Continued on Page 321)



SIMPLE flats backdrop on film of industrial machinery which is subject of three black-and-white business film. Flats, when constructed in minimum size, are easily transported to factory or other site and set up to provide a pleasing background for equipment or a manufacturing operation which is the subject of the camera.

## Importance Of Viewing Glass In Cinematography

When the cameraman looks at a scene through a viewing glass, the brightness reaching the eye is reduced sufficiently so he can judge general appearance of scene and the lighting contrasts as they will appear on film.

By LEIGH ALLEN

NOT ALL DIRECTORS of photography in the Hollywood studios use a viewing glass and most of those who do not, excuse it not because it is useless but rather because they have developed the "practiced eye" which enables them instinctively to size up color or tonal contrasts at a glance.

But a viewing glass can be real helpful at times for the seasoned veteran as well as the up-and-coming professional cinematographer. By using the glass, he can be sure—just

as when using an exposure meter instead of guessing at exposures.

When we look at the shadows in a scene, our eye automatically adapts itself to the existing light and we see detail that the film may not see. The viewing glass lowers the brightness of the scene so that the eye will see it approximately as the film will record it.

The advent of the viewing glass antedates that of the photo-electric exposure meter, and goes back to the days of "color-blind" orthochromatic film. As the first photographic films were relatively insensitive to all colors but blue in

(Continued on Page 374)



EARL STANGS, A.S.C., uses viewing glass to check contrast and lighting on set of recent production



MILTON KRASNIK, A.S.C., using lamp and viewing glass, studies effect of special makeup on cinema star Marlyn Mason

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TYPICAL: Is this small studio production crew shooting a scene for "A Place To Live," produced by Dynamic Films, New York.

Directing the photography is author Ray Long (top left) who also supervises set lighting and acts as camera operator.

## Cinematography In Small Studio Production

The cameraman's versatility and resourcefulness play a big part in commercial and industrial film production.

By RAY E. LONG

IT'S A FAIR GUESS that few categories of motion picture production demand more of the individual craftsman than does that of the commercial and industrial film.

The extent to which small studio production can be varied within a short period of time, and the unfathomable degree to which a cinematographer's ingenuity can be put to test in the process, is vividly exemplified in a busy filming program recently brought to fruition at one of the more prominent commercial film studios in the New York area known as Dynamic Films, Inc. Here is a production cue worthy of note because it literally defies not only the typical opposition of a crowded shooting schedule, but also low-budgeting.

Indeed, the old saying "variety is the spice of life" speaks exceptionally well for the small studio situation in general. A cinematographer who works in industrial and non-theatrical film production (he is called a First Commercial Cameraman on the East Coast) invariably goes about adjusting himself to periodic production variations as a matter of course. Probably the most common of the fluctuations affecting him are: (a) challenging contrasts in subject matter from one assignment to the next; (b) recurrent use of different makes and sizes of motion picture cameras for various production formats; and (c) equivalent modification in film widths and emulsions. The sky's the limit right down

the line. How well a cameraman can conduct and artistically express himself in the face of such challenges is sufficient test for any individual.

Appropriately enough, Dynamic Films' distinctive slogan, "Creative Thinking On Film," takes the cameraman into its fold as a fully-pledged individual from the very start. His personal opinion relative to matters of production, and often direction, invariably carries enough weight within the organization to be respected on practically the same level as that of the producer himself. This, in turn, endows the working atmosphere with a feeling of equality which is conducive, in effect shall we say, to "bringing home the bacon" on schedule, at the same time complementing the producer's own standard of operation.

Commendable, too, is the fact that only a mere handful of cameramen supervise as well as execute such filming programs. Heading the production crew are the directors, the first cameraman, and four or five men who represent the various other motion picture crafts. The first cameraman not only supervises the lighting of all of his set-ups, but he also acts as his own camera operator, regardless of whether the production is in 16mm or 35mm.

First on the crowded agenda in a recent sixty-day production schedule at Dynamic Films was the filming of some TV commercials in 35mm black-and-white for one of the nation's top watch distributors. The camera used was a Mitchell NC blimped for reasons of live sound. Out of a total of three days allowed for this assignment, two days went for the filming of sequences with well-known narrators, with a third devoted to the almost but nerve-wrecking business of photographing wrist watches at extremely close range. These over-sized closeups were handled very effectively by staging and lighting the product in a special in-draw-light box equipped with adjustable reflective surfaces. To complement this, the basic light source was sufficiently heavy on wattage to maintain average exposures without drastically burning depth in the focus of the large image.

As most cameramen know, few focusing chores are more intricate or provoking than those entailing long focal length lenses mounted on special extension tubes for super-magnification. Indeed, few such commercial assignments will try



THE ATTENTIVE cameraman's chores are no less significant in production in the small studio. Here first cameraman Ray Long looks on while his assistant checks aperture of the Mitchell NC camera prior to reloading.

a cinematographer's patience more, or spare his nerves less, than when they are linked with a client's premeditated conception of how his product should look through the lens. (This was a strong production point later on in the filming of other TV commercials involving extraordinary detail in the tray settings of diamond rings.) But one thing is certain. A business client must be satisfied. And happily, in both of these instances, he was.

Next in line was a technical training film for the U. S. Navy on the subject of "Visual Mine Watching." This was also filmed by the regular crew with a Mitchell, with the shooting schedule carefully planned to fit into a space of five days (a normal industry work week in the New York area). All but one day was devoted to studio work with actors filling the needs of the script and the Navy itself supplying the necessary technical advisors. The challenge was twofold. Primarily, filming had to proceed rapidly in order to meet a low-budgeted deadline, but it also had to be handled with extreme care in technical detail. So, too, was it with the lighting, tempered in low-key to artistically complement the dramatic mood of the subject. A fifth day of filming, blessed by good weather on location, brought the Navy production to conclusion and the score for the crew to "two subjects down and thirteen to go."

The film on war preparedness was hardly in the can before the studio handed the cameraman an assignment on the subject of religion. This coincidental contrast in subject matter also brought a shift in the technical aspects of

(Continued on Page 376)



AN INTRICATE rigging and lighting setup for photographing diamond rings in close closeup—typical of the unusual photographic problems encountered by the industrial studio cinematographer.



**YOUR AUDIENCE** sees your players fresh, with no preconceived ideas of their personality or behavior. It is up to you as the film maker to make them intriguing from the opening shot.

## Bring Your Characters To Life

Unless your audience is gripped by your characters, the most ingenious of plots will not be sufficient to maintain their interest.

By HAROLD BENSON

THE SAME problems of characterization in film fiction confront amateur and professional alike. Both tend to fall back to dialogue as a kind of short cut. A and B discuss C before he enters. By the time he appears the audience has already been given the main leads to his personality.

But this is the way of the playwright. The cinema offers its own methods of immediate characterization, and the scope is practically limitless. The amateur who is still exploring the fertile field of the silent film-play has many opportunities to establish his cost as promptly as the professional. This is one of the numerous cases where the

budget bears no relation to the effectiveness of the treatment.

As you script your next movie, stop for a moment to consider the way in which you judge the strangers you meet for the first time. What influenced your opinion? Why do feel well or ill-disposed towards a man you've only known for five minutes? And where and why do you often have to revise your original judgment?

Analyze your answers, and you'll see how you can translate these everyday experiences into cinematic terms. For the short film, first impressions are of the utmost importance. In reality we may have to wait five months or even

years before a person's true character is revealed; but in the cinema, the disclosure can be made as soon as he appears.

Four words contain the clue to immediate characterization: setting, dress, props and action. Each of these influences us in normal life to varying degrees. On film their total impact can be made overwhelming.

Settings are all too often regarded as mere backcloths to the action. The different atmospheres of park, pool-room and restaurant are ignored, and the result is a series of meaningless locations which add nothing to the characters or to the film.

Yet we all know that our reaction to the girl we find alone in a night-club is hardly the same as our attitude to the girl we meet in a swimming pool. The man who bumps into us on his way out of a museum makes a different impression to the stranger who is hanging about the stage door of a theatre.

Profession, education, background and even income can be suggested by the location in which we first show our main characters. Before they move or speak, the situations in which the audience discovers them provides a pointer to their position or personality.

Dress, of course, is an invaluable character revelation for the film maker. In life most people give a false impression of themselves by their appearance than in any other way. On the screen, clothes must almost always be an infallible reflection of their true selves.

But beware of exaggeration. The Bohemian dress of the artist, the roughness of the poor and smoothness of the rich can tempt us into excess in imitation. Remember the value of the close up, and concentrate on telling details. A frayed cuff or a down-at-heel shoe can

(Continued on Page 174)



**SETTINGS, dress and props** together convey the "who, where and how" of characterization.





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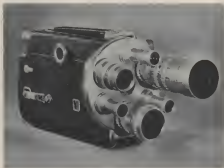
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NEW CURRENT MODEL of the Cine-Kodak E-100 movie camera combines versatility of expensive professional cameras with unusual ease of operation, may be had with  $f/5.6$  or  $f/1.4$  lenses.

## Kodak Offers Improved Cameras, Films And Projectors For 1956

By JOHN FORBES

FOR A WHILE it seemed that the manufacturers of photographic equipment were neglecting the movie amateur, and that the fascinating hobby of amateur movie making was fast losing its appeal. Little, if anything, was being done to stimulate the hobbyist's interest nor to attract new recruits to the realm of cine filming.

Now, almost suddenly, there is a re-awakening. So many new cameras and related equipment are making their appearance that it seems like old times—like the days in the early thirties when Univis started the snowball rolling on popular, low-cost movie making with a simple 8mm camera that sold for \$9.95. It became possible for every family to make and show its own movies.

Today, both Eastman Kodak Company and the Bell & Howell Company, leaders in the manufacture of cine apparatus, are stirring the amateur movie maker's interest anew with announcements about many new equipments.

Bell & Howell Company has made a notable contribution with its Model 200 EE 16mm camera that automatically adjusts the lens iris to the prevailing light, insuring correct exposure on all takes. The camera was described in detail in last month's issue.

In recent weeks, Eastman Kodak Company has made announcements about new cine cameras, projectors, films and accessories of interest to seasoned and novice movie makers alike. There is a smart new camera for the



ABOVE SERIES of pictures indicates the pictorial range of the new Cine-Kodak E-100 Turret Model camera. Pictures are actual enlargements from a 16mm film of the same subject photographed from the same camera position using five different Cine-Kodak lenses. Top to bottom they are: 25mm, 40mm, 63mm, 100mm, and 152mm.

advanced Minox movie maker and a slick little job for the beginner that gets him started making movies for the modest outlay of only \$39.95. The complete equipment for shooting and showing home movies is included in a kit priced at \$99.50.

One of the company's more interesting announcements is that regarding a turret model of the new Cine-Kodak K-100 roll film (16mm) camera. The new model combines the movie making versatility of more expensive professional equipment at moderate cost with ease of operation. The camera mounts three of Kodak's famed Ektar lenses together with matching viewfinder lenses, allowing instant changing from standard to wide-angle to telephoto shots. Ektar lenses, with appropriate viewfinders, are available in a 15mm to 152mm range. The finder shows adjacent areas, as well as the field of coverage, making it easy for the camera's user to follow action.

When any one of the lenses is swung into shooting position, the appropriate viewfinder lens automatically moves into place. The turret is in an offset position so that a wide range of lenses can be used without physical or optical interference.

The K-100 Turret Camera permits a wide range of movie effects. For example, the photographer shooting such colorful events as a yacht race can change quickly from a panoramic view of an entire fleet to an intimate closeup of a single craft and its crew. This versatility also applies to scenic shots in a travel movie, and numerous other objects.

The camera features a pre-stressed power spring motor that exposes 40 feet of film at a single winding, a shutter release at the rear of the camera, and a large, accurate speed control governor. It has a speed range of 16 to 64 frames per second, provides for uniform single-frame exposures, and uses either single-perforated film for sound recording or standard double-perforated film.

The camera can be loaded with 50- or 100-foot rolls of all regular Kodak 16mm movie films. In addition to its visual film footage indicator, it features a dial to show at any time exactly how many feet of film can be run without rewinding.

Operation at any speed is exact, with gate pressure adjusted automatically to capture sharp images on chatter-free film. An auxiliary hand crank allows the photographer to backward to produce fades and dissolves, multiple exposures, and other special effects, or to change exposures when lighting conditions are not too favorable. The camera can also be run by an auxiliary electric motor drive shaft.

For the Bion movie maker, Eastman Kodak has stocked up its line of Browne

cameras. Headlined is a 1/2.7 lens model with a \$39.95 price tag. This budget-priced camera is the same 1/2.7 model that has made sales history since its introduction in 1951—but it wears a smart new case and boasts a Sky-Guide and lens data on the name plate as added features. In the Browne movie camera line-up, it replaces the 1/2.7 model which has been priced at \$37.50.

A camera new to the Browne movie line-up has an f/2.3 lens. It is furnished with Kodak's side panels, incorporates the new Sky-Guide front, and has an optical in-field viewfinder which shows the area covered by wide-angle and telephoto converters available for the camera, as well as that of the standard lens. The rear finder element provides parallax correction in six positions ranging from infinity to three feet.

A fast 1/1.9 lens is the distinguishing element of the third camera of the new line-up, which is otherwise a twin of the 1/2.3 model. All three of these cameras have a 13mm fixed-focus lens and operate with box camera simplicity. The only setting to be made is that of the lens opening, in accordance with the amount of light on the subject. Otherwise, it's simply a matter of loading, winding, and shooting.

Topping the new Bion line-up in versatility, yet retaining the characteristic simplicity of operation, is the Browne Movie Camera, Turret 1/1.9 introduced last fall.

It enables the amateur movie maker to shoot his scenes with a standard lens, reach out for a wide-angle view, or pinpoint it telephoto fashion — without focusing or resetting for exposure. The movie maker switches from one view to the other simply by pulling out the turret, and rotating it until the desired barrel is in front of the lens.

A new Browne Movie Projector, featuring the extra brilliance provided by a 500 watt lamp and a built-in lens element which gives needle-sharp projection over the entire screen area, was introduced last month.

Bright, clear projection over a 4-foot screen width is possible with this new projector whose design includes an on-off switch. It is a more versatile version of Kodak's popular 300-watt Browne Movie Projector. It has an f/1.6 "big screen" focusing lens and accepts a 200-foot film reel for 15 minutes of uninterrupted projection.

A series of new Kodak Filter Kits which contain the basic needs for the amateur photographer who wants to get started in filter photography has been announced by the Eastman Kodak Company.

Kits will be supplied complete with filters in a rugged, compact case which has individual crystal-clear, swing-out

(Continued on Page 372)



STAR OF Eastman Kodak's new Browne Movie Camera line-up is this 1/2.7 lens model with a \$39.95 price tag. Sky Guide for exposures and lens data on the name plate.



THE NEW Browne Bion projector has a 500-watt lamp that provides ample brilliance for bright pictures on a 4-foot screen.



NEW EASTMAN Filter Kit of plastic holds three basic Wratten filters and an adapter ring, simplifies selection and use of filters.

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135 1/2 136 1/2 137 1/2 138 1/2 139 1/2 140 1/2 141 1/2 142 1/2 143 1/2 144 1/2 145 1/2 146 1/2 147 1/2 148 1/2 149 1/2 150 1/2 151 1/2 152 1/2 153 1/2 154 1/2 155 1/2 156 1/2 157 1/2 158 1/2 159 1/2 160 1/2 161 1/2 162 1/2 163 1/2 164 1/2 165 1/2 166 1/2 167 1/2 168 1/2 169 1/2 170 1/2 171 1/2 172 1/2 173 1/2 174 1/2 175 1/2 176 1/2 177 1/2 178 1/2 179 1/2 180 1/2 181 1/2 182 1/2 183 1/2 184 1/2 185 1/2 186 1/2 187 1/2 188 1/2 189 1/2 190 1/2 191 1/2 192 1/2 193 1/2 194 1/2 195 1/2 196 1/2 197 1/2 198 1/2 199 1/2 200 1/2 201 1/2 202 1/2 203 1/2 204 1/2 205 1/2 206 1/2 207 1/2 208 1/2 209 1/2 210 1/2 211 1/2 212 1/2 213 1/2 214 1/2 215 1/2 216 1/2 217 1/2 218 1/2 219 1/2 220 1/2 221 1/2 222 1/2 223 1/2 224 1/2 225 1/2 226 1/2 227 1/2 228 1/2 229 1/2 230 1/2 231 1/2 232 1/2 233 1/2 234 1/2 235 1/2 236 1/2 237 1/2 238 1/2 239 1/2 240 1/2 241 1/2 242 1/2 243 1/2 244 1/2 245 1/2 246 1/2 247 1/2 248 1/2 249 1/2 250 1/2 251 1/2 252 1/2 253 1/2 254 1/2 255 1/2 256 1/2 257 1/2 258 1/2 259 1/2 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Movie camera kits are available for the following cameras: Brownie Movie Camera 1/2.7, Brownie Movie Camera Model 2, 1/2.3, and 1/2.7, and Cine-Kodak Medallion II Camera; for the Brownie Movie Camera and the Brownie Movie Camera Model 2, 1/1.9, and for other cameras taking Series 4 and 5 Filters.

Kodak's cine films have also come in for overhauling and modernization to meet today's requirements for faster emulsions and better pictorial rendition. A new, improved, Cine-Kodak Plus-X Reversal Film, offering 16mm camera users extremely fine grain black-and-white movies of exceptional sharpness, will be placed on sale this month. This film will be sold without processing charge included in the price.

In addition to permitting projection on larger screens without loss of detail and sharpness, the new film is one-third of a stop faster when used with tungsten illumination than the Plus-X it replaced. It has a daylight exposure index of 50; a tungsten index of 40. The cost remains the same.

In introducing this film, Kodak also announced the discontinuation of Cine-Kodak Super-X and Super-XX films Reversal Films and all other Cine-

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Kodak black-and-white film as soon as existing stocks are exhausted.

The 16mm film are being dropped because the new Plus-X and the company's previously announced high-speed Tri-X Reversal Film will provide substantially improved results. The 8mm black-and-white film are being discontinued because in the important applications of black-and-white movie film—industrial, commercial, sports, news, television, etc.—the 16mm size is preferable.

All processing of Kodak black-and-white movie film will be handled

through dealers who will forward their customers' exposed film to a processing laboratory. Kodak will maintain a processing facility in Rochester, but only for the purpose of providing emergency service to dealers unable to make satisfactory arrangements with other laboratories. It is expected that the use of local laboratories will permit faster processing and delivery.

Both the Cine Kodak Plus-X and Tri-X Reversal Films are packaged for 16mm spool-type cameras, and are available in 16mm magazines on special order. **END**

## IMPORTANCE OF VIEWING GLASS

(Continued from Page 262)

order to see a subject or scene to be photographed in the contrasts it would appear on film it was only necessary to view it through a deep-blue viewing glass. All color as such then became undetectable and the scene was observed in the approximate tonal values that would be recorded on film.

As black-and-white negatives were improved and made more sensitive (and faster in speed)—and with the subsequent introduction of color film—it

became necessary to alter the filtering components of the viewing glass.

When panchromatic film came into general use, some cameramen continued to use the deep-blue colored viewing glass because it rendered the scene as monochrome; but it was soon discovered that the relative brightness did not always register on film as it appeared when looking through the viewing glass. Medium blue no longer registered as almost white, nor bright red as black

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as they had on color-Mind emulsions. The result, of course, was the development of a viewing glass which rendered colors in approximate monochromes comparable to the brightness range registered on panchromatic film. Thus the Panchromatic Viewing Glass was born.

When color negative for daylight use was developed, a need arose for a complete new type viewing glass—something that was not anticipated, because all colors of the spectrum were expected to register on color film in their natural hues. However, the contrast range of daylight color film proved to be much shorter than that seen by the eye; it was not capable of recording a scene in which there were extreme highlights and deep shadows, and doing justice to both.

Technicolor Motion Picture Corporation was among the first to meet the problem: it developed a neutral contrast viewing glass which consisted of a filter neutral in color and with a density rating of 2.0 and having a production tolerance of plus or minus 5%.

The two leading cameras used in the studios in Hollywood today—Mitchell and Technicolor—have adaptations of the viewing glass built into the camera's viewer. With the Mitchell, a panchromatic viewing glass is an integral part of the optical viewer, which becomes operative when the camera is racked

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over. The Technicolor cameras have a neutral density viewing glass, more generally referred to as an "ND filter," installed in the finder's system.

In spite of such built-in conveniences, however, the director of photography often has need for the popular little monocular-like viewing glass, which he invariably wears suspended by a neck cord. With most cameras, it is in constant use whenever they are directing the placement of lights or, on exteriors, the booster lights or reflectors.

When the cameraman looks at a scene through the viewing glass, the brightness reaching the eye is reduced sufficiently so that he can judge, not only the general appearance of the scene as it will appear on the film when photographed but also determine whether the lighting contrast is too great to record successfully on color film. Should this be the case, and since he cannot increase exposure sufficiently to record the shadow detail satisfactorily without over-exposing the highlights and burning them up, the obvious step is to direct more light into the shadows to modify excessive contrast. The viewing glass is a handy tool for checking contrasts in such an operation.

The introduction of color negative balanced for inside light made it necessary to develop a completely new viewing glass for the stock. Photo Research Corporation, Hollywood, which makes the "Spectra" viewing glasses, have developed a new glass which has incorporated into the filter system additional correction components besides the neutral factors required to produce the correct viewing contrast.

A color contrast viewing glass can be helpful to the 16mm cameraman as well as the amateur cine photographer, too; whether he uses any or all of the range of Kodachrome emulsions or Ansco Color, the use of a viewing glass can insure greater fidelity of color and correct contrast.

### CINEMATOGRAPHY IN SMALL STUDIO PRODUCTION

(Continued from Page 362)

production to the 16mm medium and color. Filming was now accomplished with a Mavor camera enclosed in the studio's regular 35mm Baby King, by now impressively rigged by engineers at Camera Equipment Company to permit the use of live sound on the set and to enable the assistant cameraman to follow-focus. Atmospherically, since the religious film made good use of non-professionals in the role of actors, the whole proceedings took on the air of a semi-documentary. In unobtrusive contrast, the cast was placed in a thoroughly simple church setting designed to sug-

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gest and suggest only, without specific identification, the presence of a puppet, a few pews, and a stained glass window. Thus, the pictorial record remained on people and their thoughts (off-camera "voices") or reactions to a preacher's delivery.

For the first cameraman and crew it was a challenge to have to film in two different sections of the studio, not necessarily simultaneously, but in a sense of preparedness, at least on short notice. This touch of spontaneity was required by the fact that various important members of the clergy who were due to arrive for film talks—many of them came from far corners of the world—often drifted into the studio (on invitation) without warning. Their presence, fittingly enough, was accommodated briefly but effectively on a separate set placed in another section of the studio, pre-lit, pre-set for sound, and otherwise made ready for filming except for slight repositioning of the camera itself. With all camera positions previously designated, this final dolly maneuver took only a few moments to execute. Thus was the entire half-hour color production, stocked with a do-or-die-to additional episode treatments for various distribution areas, brought in on a three day schedule without overtime.

With the completion of this assignment, our crew started immediately on a three week industrial assignment in an extended area of the mid-west, almost without pausing for breath!

This time the subject looked phenomenal! Black automobile tires in color. Production cameras used were the Myster and a Cine-Special, used alternately depending upon the nature of the scene. A semi-documentary, the film told how a newly-designed tire tread goes into manufacture in Ohio, only to be put through numerous endurance tests on the road in Texas at the peak of a scorching heat wave; and in addition, to be subjected to further trial in and about an Illinois research laboratory. To say that such background material (neatly black tires and huge black factory interiors) failed to defy the cinematographer in his use of slow-speed 16mm Commercial Kodachrome, would be to evade the facts of the case. But the production did carry beautifully in color in the long run because, at least in part, subtle backgrounds of colored no-ween paper were introduced wherever possible to unobtrusively "warm the atmosphere." By the same token, no energy was spared to make creative use of key lighting for tire tread sequences. Mere intensity of illumination, it might be noted, did not necessarily do the trick alone, but the angle from which a key light was aimed made all the difference in the world. Hence, not a single close-

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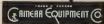
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up of a tire in the finished picture was without trace of detail.

Now only twenty-eight days remained to wind up the studio's log schedule, with the most diversified assignments yet to come. No sooner had the crew concluded the tire production in the midwest than the Navy beckoned again with a 35mm information film, this time a location project in a huge Pennsylvania supply depot. The subjects demonstrated warehouse storage.

An advance man relayed the report that some of the warehouse areas to be photographed were as spacious as the inside of a major studio sound stage. Recognizing the lighting problems the producer and cameraman agreed that the ideal film to use would be ultra-speed Tri-X. Negative quickly conducted tests confirmed an ASA exposure rating of 300. Lighting equipment consisted of four 2000-watt drivers, a half dozen 750-watt kips, some RFL2 photofloods and "scoop" floods. An Ezyrma camera was added to the Mitchell equipment to enable the cameraman to shoot from comparatively inaccessible vantage points high in the warehouses.

Five days, including time for travel to and from New York City, saw the job completed. So well, in fact, that the Navy later commissioned the studio to shoot some additional sequences for the same film in another depot near Boston, Massachusetts. It might be interesting to note here that even though no changes occurred in the cameraman's manner of working—"get the shot regardless of the odds"—an unwitting element of circumstance late one day during the filming of the extended assignment very nearly cost the man his life. To wit:

Our shot in particular was important enough to justify working in an exceptionally crowded storage hut. In order to set up for the best possible camera angle the cameraman literally wedged himself into a tight position halfway behind the Mitchell (on a tripod) and the metal framework of the hut. The atmosphere was warm and humid, inducive to perspiration. As a routine procedure scenes were being pre-lit as soon as they were set up; the assistant cameraman held the slate before the camera, the cameraman, taking the cue, tucked the carriage over and threw the switch. By some irony of circumstances he was all but electrocuted right on the spot!

Immediate investigation failed to disclose any existing factory hazards crossed power lines or defective camera mechanism but a careful review of the circumstances left little doubt in anybody's mind that the cameraman may have quite innocently created a hazard on his own accord. Namely,

(a) his back, saturated with perspiration, had been in direct contact with the metal framework behind him, while (b) both of his hands had been touching some metallic portion of the camera, specifically at the time that he threw the switch. These extraordinary factors caused his body to conduct so much electricity he "fused" into a partial state of coma for a full seven seconds before some quick-witted worker managed to break the power line at its source outside the hut.

Back in the studio in New York two days later, the concluding surge of film variety began anew. To get the production ball rolling, forty energetic children and five professional musicians one day completely filled one side of the studio for the filming of a 16mm short that rallied a point for musical appreciation, whereas Yehudi Menuhin, the world-renowned violinist, earnestly upheld the virtues of the same subject by contributing on a different morning to a prologue sequence. Presumably the studio mood changed back to 35mm TV commercials, plugging in bars, spray guns, bread, and diamond rings. Then the shift was to pocket-sized versions of concert opera in plain dress. Needless to say, it was one glorious bodge-podge and challenge after another, climaxed in due course by two final film topics completely different from anything that had gone before.

One of these was the spectacular 500-mile Indianapolis Speedway Race, a classic as seen in 16mm color documented on race day by an augmented crew of at least six cameramen stationed at vantage points all around the great oval track. Every cameraman's lens had to be kept to the excitement of the event, right around the clock, for the simple reason that second takes were impossible.

Last but by no means least on the schedule was the classic film assignment of them all. A dramatic but sincerely conceived social documentary treating the subject of Gerontology. Filmed in 35mm black-and-white (later to be reduced to 16mm for national distribution), it had the blessing of one of the most understanding scripts ever to be prepared as the subject of old age, alive not only with character and human interest, but also with the intent to reach into the heart of the matter via the compelling, tell-tale facts of real people. Here, at last, was a small studio cameraman's golden opportunity to invest the "Hollywood touch." Thus, key scenes were photographed on studio sets with tireless attention to mood and drama. Perfectly cast professional actors, mutually selected by the director and cameraman prior to production, warranted this special run. While sequences with bona-fide old folks were

filmed in "model" rest homes elsewhere to lend authenticity to the narration. It was truly a *rose de jove* for cameramen and director alike, the half-hour production going to the editing after only twelve days of camera work.

It's as much of a challenge to tackle the camera in small studio production as it is a first-rate thrill to assume the responsibility. Furthermore, it is with in the ken of any cinematographer—if he loses his work—to make something good out of an assignment regardless of the odds, or for that matter, regardless of the film category.

## BRING CHARACTERS TO LIFE

(Continued from Page 265)

be more convincing than rags and tatters.

The clothes themselves should indicate just as much as their condition. Taste and character can be deduced from casual tweeds or a dapper pinstripe. Screen girls should not be merely fashionable; their dress ought to say something about their personality.

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Other props can be equally telling. Umbrellas, spectacles, newspapers, sports equipment and cameras have strong powers of suggestion. The husband with a shopping bag or a girl with ice-skates slung over her shoulder are given an extra depth by their props. Don't overlook the potentialities of such trappings and trimmings.

Settings, dress and props together an ever the where, when and how of characterization. But the most vital aspect has yet to be considered. After these frills have made their impact, what is it that finally influences your reaction to a stranger?

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(Continued on Page 267)

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## ALLIED ARTISTS

- **HAZEN NUTALL, ASC**, "Always Trouble," with Monte Hall and Adele Jagan. George Blair director.
- **EVANET HALLER, ASC**, "The Cool Town," with John Farrow and Matt Blanchard. Leo Lunden, director.
- **CARL GUTERICH, ASC**, "The Oldswoman," (CinemaScope & Color), with Joel McCrea and Virginia Brann. FREDERICK LYNN, director.

## AMERICAN NATIONAL

- **JOHN MERRILL**, "TV Reader's Digest," TV. Various directors.
- **WILLIAM A. SCHNEER, ASC**, "Minkie," TV (Minkie TV Productions), with James E. Mason, Frank La Touraine, and Virginia Martindale. James E. Mason, director.
- **MONROE ARNOLD**, "The Man Called K," TV, (Ziv TV), with Barry Sullivan, Eddie Davis, director, "Walt Pines Story," TV, (Ziv TV), with Robert Vaughn, Louis Besson, director.
- **LORE FETTER**, "Service Fiction Theatre," TV, (Ziv TV), with Stella Cassavese and Jackson Bradford. Herb Strunk, director.

## CALIFORNIA STUDIOS

- **JOSEPH BANC, ASC**, "Cordell Faint," TV, (Paramount Productions), with Devery Martin. C. Marquis Warren, director.
- **KENNETH PEACH, ASC**, "Forsaking the Trail Blazer," TV, (Paramount Productions), with Steve Cochran, Ray Nazario, director.
- **FREDERICK GASTY, ASC**, "The Rosemary Clancy Show," TV, (Mayville Corp.) with Rosemary Clancy. Dick Darby, director.

## COLUMBIA

- **BURNETT GUSTY, ASC**, "Night Fall," with Aida Roy and Anne Banasch. Jacques Tourneur, director.
- **RAY BENJAMIN, ASC**, "Guns of Fort Putnam," (Revue Murphy Pictures, Inc.), with Anne Murphy. George Marshall, director.
- **ART GARDNER**, "Fanny Kassar Boy," TV, (United Artists) with Robert Young. Jacques Tourneur, director.
- **CHARLES LAWRENCE, ASC**, "Full of Life," with Jack Hollister and Richard Conte. Richard Quigg, director.
- **RAY KILBE, ASC**, "Cha, Cha, Cha," with Mary Kaye Fine and Fritz Fauds. Fred Sears, director.
- **HENRY FREDRICK**, "The White Screen," with David Brian and Mary Wynn. Ray Nazario, director.

- **EDMOND DICKERSON**, "Tie Down Under," (Warwick Productions) with Fred Astaire and Jack Lemmon. Robert Parrish, director.

- **GEO. ANDERSON, ASC**, Ford Theatre, TV, with Howard Da Silva and Janet Blair. James Neilson, director.

- **FRED JACOBSON**, "The Citty Bops," TV, (Shoreline General), Douglas Hayes, director.

## WALT DISNEY

- **WALLY CAWLEY**, "The Hardy Boys," TV, Charles Hall, director.
- **GEORGE AYLS**, ASC, "The Monkey Movie Club," TV (Gilbert Miller), director.

## PLAYING A

- **BILL BRADSHAW, ASC**, "Buffalo Bill, Jr.," TV, with Dickey Jones and Pappy Chubby. George Archibald and Frank MacDonald, directors, "Amaro Cowboy," TV, with Gale Davis. George Archibald and Frank MacDonald, directors.

## JERRY FAIRBANKS STUDIO

- **JACK NICHOLSON, Jr.**, "Edge Ray Beam," TV, (Universal Productions), with Edgar Buchanan. Walt E. Brown, director.

## FOX WESTERN AVENUE STUDIOS

- **RAUL STULIN, ASC**, "My Friend Flicka," TV, (ITC Television), with Gene Evans and Anita Louise. John English, director.
- **LOYD ARNOLD**, ASC, "Mama's Beaching House," TV, (ITC Television), with Paul Douglas and Alexis Smith. John English, director.

## GENERAL SERVICE STUDIOS

- **ROBERT PUTTACE, ASC**, "Private Secretary," TV, (Chester TV, Inc.) with Ann Sothern, Don Porter and Ann Tyrrell. Oscar Knutson, director.
- **NEAL BECHTER**, "The Adventures of Ozzie and Harriet," TV, (Stage 5 Productions), with Ozzie, Harriet, David and Ricky Nelson. Ozzie Nelson, director.
- **LOUIS VAN TROEN, ASC**, "Boris & Allen," TV, (McCadden Productions), with GRACE ALLEN and George Burns. Frederick de Cordova, director, "Camelot & B. F. Goodrich commercial," TV. Frederick de Cordova, director.
- **MARY WILK, ASC**, "Bob Cummings Show," TV, (Harcourt Productions), with Bob Cummings and Rosemary DeCamp. BOB ANDERSON, director, "Dunbar commercial," TV, Red Ann Ross, director.

## GOLDWYN STUDIOS

- **LEE GARNER, ASC**, "The Shadblowers," (CinemaScope & Color), (Samuel Goldwyn Jr. Productions), (Shooting in Cuba) with Victor Mature and Karen Steele. Jerry Hopper, director.
- **WILLIAM WHITLAK, ASC**, "Crossroads," TV, (Federal TV, Inc.) with Red Cameron, Ralph Harpaly and other directors.

- **GEORGE CLARENCE, ASC**, "Solism Playhouse of Stars," TV, (Meridian Productions), Joe Shelton, director.

- **HAI MYER, ASC**, "The Boss," (Boss Productions), with John Payne, William Bishop and Don Avedon. Hyman Haskins, director.

## INDEPENDENTS

- **GUY RAE, ASC**, "Caraphenian," TV, (Visual Drama, Inc.), Bill Kim, director.
- **FRANK FLAHER, ASC**, "The Pride and the Passion," (Technicolor), (VistaVision), Stanley Kramer Prod. for UA, shooting in Spain, with Cary Grant and Frank Sinatra. Stanley Kramer, producer-director.

- **FRED WOOD, ASC**, "The She-Creature," (Golden State Prod. for American International), with Charles Morris and Maria Knight. Edward Galt, director.

- **J. EDGAR GARDNER, ASC**, "I Can't No Shed No," (W. Lee Wilder Prod. shooting in New York) with Eric Fleming and Nancy Malone. W. Lee Wilder, director.

- **GEORGE ROBERTSON, ASC**, "Dance With Me, Henry," (Bob Goldstein Prod. for UA) with Albert and Camille. Charles Barton, director.

- **LEE GARNER, ASC**, "The Big Band," (Lewin Shandberg Prod. for UA release, shooting in Cuba) with Fred Flynn and Rosemary Ray. Richard Wilson, director.

- **RAY FORDMOUTH, ASC**, "Blame Show," TV, for NBC with Arlene Francis. Bill Witman, director.

- **STUART THOMPSON, ASC**, "Waldie," TV, (Katherine Films) with Gil Serrano. Arthur Hodge, director.

## KEY WEST STUDIOS

- **WALTER SORFEDGE, ASC**, Scenes of religious pictures, TV. William Glendon, director.

## KUNG STUDIOS

- **GLENN MACWILLIAMS**, "Baldied Oil," commercial, TV. Hank Luden, director.
- **WILLIAM HOLLON, ASC**, Short subject, TV, (Tedd-Ad), Hank Luden, director.

## ART UNGETTER PLAYHOUSE

- **ALAN SHAWMONT, ASC**, "People Are Fun," TV, (John Gould Productions), with Art Linkletter. John Gould, director.

## KTV STUDIOS

- **MAUR STONER, ASC**, "Libertine," TV, (Dudley Productions), with Libertine. Duke Goldstein, director.
- **KENNETH PRICH, ASC**, "Five Steps to Grease," (Grand Prod. for L.A. release) with Ruth Brown and Sterling Roderick. Harvey S. Knutsen, producer-director.

# METRO-GOLDWYN-MAYER

• **FRED JACOBSON, Jr., ASC**, "Babe," (Arvin Productions for MGM release) with Dana Delany, Louis Jourdan, Barry Sullivan and Frank Lonergan. Andrew Stone, director.

• **ROBERT BRONSTEIN**, "The Opposite Sex," (CinemaScope & Color) with Jane Fonda and Jeff Richards. Dana Miller, director.

• **ROBERT SCHLES**, ASC, "Executive Decision," (Cinema & Color) with Montgomery Clift and Elizabeth Taylor. Edmund Dreyer, director.

• **JOHN ALTON**, "The Red and the White," with Deborah Kerr and John Kerr. Vincent Minnelli, director.

• **RENNETT HAMILL, ASC**, "The House of the Living Dead," (Color, CinemaScope) (about to be shown) with Marlon Brando and Glenn Ford. David Mann, director.

• **FRED A. YOUNG, ASC**, "The Sonnets of Shakespeare," (CinemaScope & Color) (showing in England) with Jennifer Jones and Sir John Gielgud. Sidney Franklin, director.

• **JACQUES BAIS, ASC**, "A Man Is Ten Feet Tall," (showing in France) in New York City with John Cassavetes and Kathleen McGuire. Martin Ritt, director.

• **GEORGE FRANKIN, ASC**, "The Power and the Prize," with Robert Taylor, Burl Ives and Elizabeth Taylor. Henry Koster, director.

# MOTION PICTURE CENTER

• **NEIK MONTAGNA, ASC**, "The Love Up," TV, (Dolby Prod.) with Warren Anderson. J.L. Mann, director.

# PARAMOUNT

• **CHARLES LANE, ASC**, "Goodnight at the O.K. Corral," (VistaVision & Technicolor) with Burt Lancaster, Kirk Douglas, John Ireland and Jo Van Fleet. John Sturges, director.

• **LOREN GEIGER, ASC**, "Three Violent People," (VistaVision & Technicolor) with Charlton Heston, Anne Bancroft and Gilbert Roland. Rudy Mann, director.

• **ERNEST LAUREL, ASC**, "The Legend of Omar Khayyam," (Technicolor, VistaVision) with Charlton Heston, Anne Bancroft and Gilbert Roland. William Dieterle, director.

• **LEONEL LINCOLN, ASC**, "The Lonely Man," (Technicolor, VistaVision) with Jack Palance and Elaine Anderson. Henry Levin, director.

• **DANIEL FAPP, ASC**, "Hollywood or Bust," (Technicolor, VistaVision) with Burt Reynolds, Betty Love and Pat Crowley. Frank Tashler, director.

• **SAM LEVINSON, ASC**, "Flowerman," (VistaVision & Color) (being photographed in Spain). Don Siegel, director.

• **JOCK WARREN, ASC**, "Search for Bridget Marquardt," (VistaVision) with Terry Wright and Louis Hayward. Noel Langley, director.

# REPUBLIC STUDIOS

• **ED COLEMAN, ASC**, "Dygg," TV, (MGM Prod.) with Jack Webb. Jack Webb, director.

• **BOB THACKERY, ASC**, "Frontier Doctor," TV, (Studio City TV Productions) with Ben Allen. William Witkin, director.

• **JOHN MACBETH, ASC**, "Crescendo," TV, (Beverly Productions) with Bruce Kersh. Price Adams, director.

• **RENE KARPATZKE**, "The Millionaire," TV, (Don Freedman Productions) with Ruth Hussey. Sidney Martin, director.

• **JOCK FEINBERG, ASC**, Kellgren's, Kaiser Aluminum, and Fuller Paint commercials. TV. Peter Johnson, director.

# RED

• **GEORGE DERRANT, ASC**, "Stage Seven, Ball of Steel," TV, (Four Star Productions).

• **PAUL VOGEL, ASC**, "Public Figure Number One," with Red Skelton and Virginia Blaine. Norman MacLeod, director.

# THE BOACH STUDIOS

• **LUCY'S AMERICAN, ASC**, "The Life of Riley," TV, with William Bendit. Alvin Berlin, director.

• **PAUL DAVIS**, "Stories of John Noddy," TV, with John Noddy. Various directors.

• **JACK MACKENZIE, ASC**, "Cook 3," TV, Various directors.

• **EDWARD FREDERICK, ASC**, "The Charlie Farrell Show," TV, with Charlie Farrell. Bud American, director.

# SUNSHINE STAGE

• **PAUL WYLL, ASC**, Shaffer Post commercial, TV, (1 Star Prod.) Chester Glassey, director.

• **RAY FERNBERG, ASC**, GOR. Raitt commercial, TV, (5 Star Prod.) Chester Glassey, director.

• **FRANK TONKINS**, California Federal Savings commercial, TV, (5 Star Prod.) Chester Glassey, director.

# 30TH CENTURY FOX

• **MICHAEL KASNER, ASC**, "Bus Stop," (CinemaScope & Color) with Marilyn Monroe, Don Murray and Arthur O'Connell. Joshua Logan, director.

• **WILLIAM CLINE, ASC**, "The Last Wagon," (Deluxe Color, CinemaScope) (showing at Sedona, Ariz.) with Richard Widmark and Tatum O'Neal. Delmar Daves, director.

• **JOE MATHIAS, ASC**, "One in a Million," (Deluxe Color, CinemaScope) with James Mason and Barbara Rush. Nicholas Ray, director.

• **LEON SHAWNE, ASC**, "But Things in Life Are Free," (Technicolor, CinemaScope) with Gordon MacRae and Sherie North. Michael Curtiz, director.

• **LEO TUCKER, ASC**, "The Day The Century Ended," (Technicolor, CinemaScope) with Robert Wagner and Terry Moore. Richard Fleischer, director.

# UNIVERSAL-INTERNATIONAL

• **RONALD METTS, ASC**, "Bartle Henry," (CinemaScope) with Rock Hudson. Douglas Suck, director.

• **ELLEN CARTER, ASC**, "The Male People," with John Agar and Cynthia Patrick. Virgil Vogel, director. Eastman Kodak commercial, TV. Jack Donaghy, director.

• **RANDOLPH LIPSTEIN, ASC**, "The Great Man," with Joseph Ferrer and Viola Freeman. Jose Ferrer, director.

• **GEORGE BOHANNAN, ASC**, "Gun for a Coward," (Technicolor) with Fred MacMurray and Chill Wills. Albert Sabin, director.

• **IRVING GLASSBERG, ASC**, "Four Bright Girls," (Technicolor, CinemaScope) with George Nader and Paula Adams. Jack Star, director.

• **ANTHONY ARNONE, ASC**, "Tension," (Technicolor, CinemaScope) with Debbie Reynolds and Leslie Nielsen. Joseph Pevney, director.

• **MALTY GUTTMAN, ASC**, "The Loved Beloved," with Jack Mahoney and Leigh Snowden. Richard Berfield, director. Colgate commercial, TV. Wil Cowan, director.

• **BILL MARCUSSE, ASC**, "Foot Loosers," (Bel Air Prod.) with John Dehner and Frances Helm. Lucely Sclander, director.

• **CLIFFORD STINE, ASC**, "The Incredible Shrinking Man," with Grant Williams and Randy Stuart. Jack Arnold, director.

• **RONALD METTS, ASC**, "Honey, Carry," with Jerry Corbin and Martha Hyer. Blake Edwards, director.

• **ELLEN CARTER, ASC**, Colgate, Eastman Kodak, Budweiser, commercials, TV, Wil Cowan, director.

• **JOCK FEINBERG, ASC**, Colgate, Eastman Kodak commercials, TV. Wil Cowan, director.

• **LEONARD WISSE, ASC**, Eastman Kodak commercial, TV. Wil Cowan, director.

• **CHARLES WILSON, ASC**, Profl commercial, TV. Wil Cowan, director.

# WARNER BROS.

• **ROBERT DUNN, ASC**, "The Wrong Man," (Alfred Hitchcock Prod., showing in New York City) with Henry Fonda and Vera Miles. Alfred Hitchcock, director.

• **FRANK CRONER, ASC**, "The Old Man and the Sea," (WarnerColor, wide-screen) (showing in Cuba) with Spencer Tracy. Fred Zinnemann, director.

• **TIM MCCOMB, ASC**, "The Girl He Left Behind," with Ted Basser and Natalie Wood. David Butler, director.

• **RAY FERNBERG, ASC**, "Wagner Bros. Presents," TV, with Gail Wyman. Gordon Douglas, director. Keweenaw Process Shots. Merilyn LeMay, director.

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AUDIO VISUAL  
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**BRING YOUR CHARACTERS TO LIFE**

(Continued from Page 89)

gest you share common interests and outlooks, and you may find him of agreeable, well-groomed appearance. Yet within the first few seconds of meeting, all these factors may be completely cancelled out by some action on his part.

For action is the keynote to character. Whatever their outward appearances, it is what our acquaintances do that eventually commands or condemns them in our eyes. The "moment of truth" can be immediate, or it can take a lifetime. On the screen we can make it instantaneous.

This doesn't mean that the action has to be dramatic or sensational. A coin dropped in a beggar's cap, a helping hand for an old lady or a small courtesy by a driver can be an immediate pointer. So, too, can an impatient gesture or an angry glance.

Perhaps the most indicative actions are those made privately. The youngster who beams proudly at his reflection as the mirror as he dresses and the girl who hops about ecstatically as she speaks on the phone are at once established as three-dimensional people.

These establishing shots should never appear as diversions from the main thread of the plot. Indeed, as their purpose is to sum up a character's most important features as briefly as possible, they must be strongly bound to the film's central theme.

A little discipline in scriptwriting can even unite swift characterizations and plot. Keep the settings in the natural environment of your story, and let the

introductory action be not an aside but a comment on the role the new character is to play.

A romantic comedy concerning two hard-up students might begin with a collision between them outside a public library. The man promptly picks up the books the girl has dropped, noting the titles as he does so. The audience, of course, do the same. In three or four shots we establish that both youngsters are students (the setting) and broke (their clothes), that she has romantic inclinations (her books) and that he is bawdy (the collision) helpful and curious (his reaction to the titles).

Once you've got your characters off to a satisfactory start, don't let them degenerate into puppets. It's not what they do—it's the way they do it that counts. Don't be content to let them simply perform the plot's essential requirements. Allow them scope to stress their individuality.

Habits can be particularly revealing. The frown, the tug at the ear, the anxious fingerling all are cinematic details ready for the emphasis of the closeup. Even in a ten minute short a repeated mannerism can help to create a character.

Create is the operative word in script writing. Your audience sees your players fresh, with no preconceived ideas of their personality or behavior. It is up to you to make them intriguing from the opening shot. Unless your audience is tripped by your characters, the most ingenious of plots will not be sufficient to maintain their interest.

**BOB BAILEY'S 16MM PROCESSOR**

(Continued from Page 267)

ly every time I get a new idea," he says.

And what seems almost remarkable to him, in retrospect, is the small number of mechanical breakdowns the machine has experienced in its five year existence.

"I suppose it's because of the constant maintenance we give it," Bailey says. "Four of us in the shop know every screw in the thing, and the minute it doesn't even sound right, we get to work."

To be sure, the sound of Bailey's machine is one of its distinguishing features. It wasn't built to be soundproof, and it's not. It seems to be pitched somewhere between a two-table bridge party and a newspaper printing press.

Visually, too, Bailey's machine is impressive in action.

Wheels, pulleys, gears, and film turn in full view. Fans hum. Rollers spin. There is action in all three rooms. The speedometer indicates that processing is underway at 45 miles per hour. The top speed is around 60, maximum speed 28.

And that's the way it's been for the more than 1,500,000 feet of 16mm film that have passed through Bailey's creation. During football seasons, particularly, the machine is going night and day, as film records of high school and college games rush through the lab.

All of which makes it possible to justify the hundreds of man hours Bailey and his men have put into the odd-looking



ing but practical processor. And to Bob Bailey it represents not only an investment of almost \$6000 and many months of work, but it shows what one can do when you're convinced you can build your own "better mousetrap."

## SET CONSTRUCTION

(Continued from Page 361)

the special double-headed nails which are commonly used in motion picture studios. These nails may be driven hard to secure the brace in place, at the same time leaving the second head above the flat or floor surface to facilitate easy removal with a claw-hammer.

Obviously, the joint between flats will show unless it is covered adequately before paint and wallpaper is applied. Ordinary gummed Kraft paper tape may be used for this, measuring and applying it over the seams before finishing with wallpaper or paint.

Hollywood studio decorators usually use a simple water-color paint, on the order of Kalkmine. This can be washed off simply by applying water, but is usually left on and painted over when the flat is used again. To give the rough textured effect of a plastered or stucco wall, a quantity of sawdust is mixed with the paint.

Any kind of wallpaper may be applied to a flat. There are some patterns that are ideally suited to motion picture sets such as brick, stone, wood textures, etc. Many of the "marble" walls and columns seen in major studio sets are the result of using wallpaper having a marbled pattern.

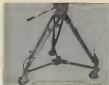
As flats are used and re-used, it is unnecessary to remove wallpaper previously applied. Several layers of wallpaper may be applied before it becomes necessary to strip the flats clean for reuse. Where the flats are made of plywood, hot water or steam will hasten the removal of the paper. With composition wallboard, water should never be used; the paper should be carefully stripped off with a putty knife or other similar tool.

There invariably will be instances where it is desired to shoot reverse angles, and where the set has but two or three walls. It will call for another wall panel to be shifted into place to represent the opposite side of the room. This is termed a "wild" wall, which means that it is readily removable to accommodate the camera whenever necessary. Put in place, it completes the set. But by merely pulling out a few nails and removing the supporting braces, the wall may be removed to give the camera crew more room in which to work.

When overhead scaffolding is re-

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quired for set lighting, set and scaffolding are completely separate units in standard studio practice. Thus, "wild" walls may readily be removed without affecting the loops.

Some small commercial film studios which operate in quarters converted for the purpose often do not have the ceiling space necessary for regular scaffolding. In such instances, lights must be hung from ceiling hangers or secured along the top edge of the sets. Adjustable metal lamp hangers that slip over the top of the flats and "Alligator" lamp-clamps facilitate the use of small lighting units for back-lighting and for effect lighting on walls, etc.

Simple clamp-on reflectors and photo-flood lamps also may be used for this type of lighting. Fitted with light-concentrating "lenses" and No. 2 or No. 4 photo-floods, these units afford excellent professional lighting effects for small sets when clamped to the top of the flats.

A simple set that consists of straight, flat walls may be adequate for the action, but it isn't always conducive to the most effective lighting and photography. One has only to observe the average interior set in a motion picture screened at a theatre to note how much the professional cinematographer gains from playing with contrasting highlights and shadows at points where the set-wall has a little projection or is recessed. Thus, you also can accomplish by simply making up a few special flats of normal height and only one or two feet in width. With these, it is possible to provide interesting offsets or recesses in the wall contours that otherwise would appear flat and uninteresting pictorially. At the same time they offer the cameramen opportunity to get an illusion of relief in his set lighting.

Flats needn't necessarily be flat. For greater variety and scope in set design, curved flats are essential. This calls for a curved frame, top and bottom, and steaming the plywood so it may be curved to fit the contour of the frame. Where composition wallboard is used, the curve may be easily accomplished without use of steam. Curved flats are a more complicated job of carpentry than the ordinary flat, but it can be done, even by non-professionals. Stock curved sections come in very handy in the studio in remodeling old sets and set sections to give them a "new look."

Some studios use flats covered with muslin instead of plywood or wall board. For the non-professional they are not recommended because such flats require extra reinforcement to prevent the surfaces "rippling" every time a door is opened or closed.

Perhaps the greatest secret in professional use of indoor sets is making the

fullest possible use of the camera's tremendous power of visual suggestion. What you actually build on the stage doesn't matter nearly so much as how you cause the camera to "see" and record it. The actual set need extend but a few inches beyond the side-lens of the field of the lens used on the camera—just enough to give a safe margin for finder parallax. Any additional construction is wasted effort and expense.

The thing to remember is that the motion picture camera is an impressionist. You can fool it into seeing things that do not actually exist, by the power of "suggestion" that is implied in the lighting, the camera angle, etc. But you start with the set—construction of the set, that is. And for this you begin by assembling flats which, as we have suggested here, can easily be built by anyone handy with carpenter tools.

## MOVIES ON TAPE

(Continued from Page 322)

signal fed directly to the Ampex Video-tape recorder. Motion picture films would not be involved in any way whatsoever. However, besides the unresolved problem of inferior picture quality as compared to that obtained with film, there is also the problem of how to cut and edit video-tape pictures.

In the application of video-tape recording to TV, the recording is continuous and the recorded program is complete, requiring no cutting or editing. The editing of video-tape in the same manner as editing motion picture film is impossible and thus one factor alone precludes its use in the production of motion pictures. This is not to say that this obstacle cannot be overcome, but for the foreseeable future, at least, it is highly improbable.

## INDUSTRY NEWS

(Continued from Page 307)

A feature of the camera is its extremely light weight. With fully-loaded magazine containing 50 feet of film, it weighs less than 5½ pounds. Standard 50-foot film cartridges are used.

Shutter speed is 1/250 of a second. This speed cannot vary with changes in frame rate as the shutter design entails two blades each rotating in the same direction. The forward blade, or shutter blade, has an angular extent of 92 degrees and rotates at a constant speed of 64 R.P.S. The second blade has a 115 degree angular extent and rotates at the same speed as the frame rate, i.e., 64, 32 or 16 f.p.s. With this arrangement the required shutter speed of 1/250 second is maintained.





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